

New linyphiid taxa from Siberia and the Russian Far East, with notes on the genera *Notioscopus* Simon and *Carorita* Duffey et Merrett (Aranei: Linyphiidae)

Новые таксоны пауков-линифиид из Сибири и Дальнего Востока с замечками о родах *Notioscopus* Simon и *Carorita* Duffey et Merrett (Aranei: Linyphiidae)

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KEY WORDS: Spiders, Linyphiidae, Siberia, Russian Far East, *Notioscopus*, *Carorita*, new genera, new species.

КЛЮЧЕВЫЕ СЛОВА: пауки, Linyphiidae, Сибирь, Дальний Восток России, *Notioscopus*, *Carorita*, новые роды, новые виды.

ABSTRACT. A new monotypic genus, *Notiogyne* gen.n. (type species: *Notiogyne falcata* sp.n.), as well as *Notioscopus sibiricus* sp.n., *Carorita sibirica* sp.n. and *Stemonyphantes parvipalpus* sp.n. are described from Siberia and/or the Russian Far East. All records of *Notioscopus jamalensis* Grese, 1909, except for the original description, are based on misidentifications shown to actually concern *N. sibiricus* sp.n., whereas *N. jamalensis* Grese, 1909 is considered as a nomen dubium. The genus *Carorita* Duffey et Merrett, 1963 is here restricted to two species, one of them being new: *C. sibirica* sp.n. In fact both *C. paludosa* Duffey, 1971 and *C. hiberna* (Barrows, 1945) are not congeneric with the type species *C. limnaea* (Crosby et Bishop, 1927). A new genus, *Karita* gen.n., is erected for *C. paludosa*, while *C. hiberna* is provisionally transferred to *Diplocentria* Hull, 1911. The following new combinations are proposed: *Carorita paludosa* Duffey, 1971 = *Karita paludosa* (Duffey, 1971), comb.n.; *Carorita hiberna* (Barrows, 1945) = *Diplocentria hiberna* (Barrows, 1945), comb.n.

РЕЗЮМЕ. Из Сибири и/или Дальнего Востока России описан монотипический род *Notiogyne* gen.n. с типовым видом *Notiogyne falcata* sp.n., а также еще три новых вида: *Notioscopus sibiricus* sp.n., *Carorita sibirica* sp.n. и *Stemonyphantes parvipalpus* sp.n. Установлено, что все указания *Notioscopus jamalensis* Grese, 1909, за исключением оригинального описания, ошибочны и относятся к другому виду, который описан как новый: *N. sibiricus* sp.n., тогда как *N. jamalensis* Grese, 1909 признан nomen

dubium. *Carorita paludosa* Duffey, 1971 и *C. hiberna* (Barrows, 1945) не принадлежат к одному роду с типовым видом *C. limnaea* (Crosby et Bishop, 1927). Для *C. paludosa* установлен новый род *Karita* gen.n., а *C. hiberna* (Barrows, 1945) временно помещен в род *Diplocentria* Hull, 1911. Предложены новые комбинации: *Carorita paludosa* Duffey, 1971 = *Karita paludosa* (Duffey, 1971), comb.n.; *Carorita hiberna* (Barrows, 1945) = *Diplocentria hiberna* (Barrows, 1945), comb.n.

Introduction

Newly amassed spider material from various regions of Siberia and the Russian Far East still contain new species of Linyphiidae. On the other hand, their number over the past few decades has dropped very considerably, meaning that at present the linyphiid fauna of the Asian part of Russia can be considered as fairly well-known. This paper continues my studies on the Siberian and Far Eastern linyphiid faunas, this time being devoted to the description of four new species, the erection of two new genera, as well as a reassessment of the genera *Notioscopus* Simon, 1884 and *Carorita* Duffey et Merrett, 1963.

Material and Methods

This paper is based on material collected recently by Alexander B. Ryvkin, Elena M. Veselova (Moscow, Russia), Yuri M. Marusik (Magadan), Leonid B. Ry-

balov (Moscow) and myself, as well as on the collections of the Zoological Museum of the Moscow University.

In the descriptions, chaetotaxy in Erigoninae is given using the following formula: 2.2.2.1, which refers to the number of dorsal spines on tibiae I–IV, respectively; in Stemonyphantinae as follows: Ti I: 2-1-1-2(1), which means that tibia I has two dorsal, one pro- and one retrolateral spine, and two or one ventral spine (the apical spines are herewith disregarded). The sequence of leg segments in measurement data is as follows: femur + patella + tibia + metatarsus + tarsus. All measurements are given in mm. Scale lines in figures = 0.1 mm, unless otherwise indicated.

The holotypes and most of the paratypes described in this paper are stored in the Zoological Museum of the Moscow University; some duplicate paratypes are preserved in my personal collection.

Abbreviations

Abbreviations used in the text and figures: ARP — anterior radical process; CAT — personal collection of Andrei Tanasevitch (Moscow, Russia), Co — column, DP — dorsal plate, E — embolus, ED — embolic division, EP — embolus propoer, FD — fertilisation ducts, MM — median membrane, MP — median plate, N.R. — Nature Reserve, O — genital openings, R — radix, RA — radical apophysis, SA — supratregular apophysis, SD — sperm ducts, SP — stylet-shaped process, Su — supratregulum, TA — terminal apophysis, Tm I — position of the trichobothrium on tibia I, ZMMU — Zoological Museum of the Moscow State University, Moscow, Russia.

Notioscopus sibiricus sp.n.

1988 *Notioscopus jamalensis*, non sensu Grese, 1909. — Eskov, Materials on the fauna of Middle Siberia, and of the adjacent areas of Mongolia: 122 (examined).

1992 *Notioscopus jamalensis*, nec sensu Grese, 1909. — Eskov, Trudy Zool. Inst. Akad. nauk SSSR, Leningrad, 226: 56 (examined).

1992 *Notioscopus jamalensis*, nec sensu Grese, 1909. — Eskov, Arthropoda Selecta, 1 (2): 79 (examined).

1992 *Notioscopus jamalensis*, nec sensu Grese, 1909. — Koponen & Marusik, Entomol. Fennica, 3: 166 (examined).

1992 *Notioscopus jamalensis*, nec sensu Grese, 1909. — Marusik et al., Korean Arachnol., 8 (1/2):146 (examined).

1993 *Notioscopus jamalensis*, nec sensu Grese, 1909. — Marusik et al., Arthropoda Selecta, 1 (4): 74 (examined).

1994 *Notioscopus jamalensis*, nec sensu Grese, 1909. — Eskov, Catalogue of the linyphiid spiders of northern Asia: 82 (part: except for the original description).

1996 *Notioscopus jamalensis*, nec sensu Grese, 1909. — Marusik et al., Acta Zool. Fennica, 201: 34 (examined).

1997 *Notioscopus jamalensis*, nec sensu Grese, 1909. — Mikhailov, Catalogue of the spiders of the territories of the former Soviet Union: 84 (part: except for the original description).

1999 *Notioscopus jamalensis*, nec sensu Grese, 1909. — Marusik & Logunov, Arthropoda Selecta, 7 (3): 243 (examined).

2000 *Notioscopus jamalensis*, nec sensu Grese, 1909. — Marusik et al., Spiders of Tuva: 60 (examined).

2001 *Notioscopus jamalensis*, nec sensu Grese, 1909. — Rybalov et al., Izuchenie biologicheskogo raznoobraziya na Yeniseiskom ekologicheskom transekte. Zhivotnyi mir: 83 (examined).

2002 *Notioscopus jamalensis*, nec sensu Grese, 1909. — Marusik et al., Arthropoda Selecta, 10 (4): 334 (examined).

2006 *Notioscopus jamalensis*, nec sensu Grese, 1909. — Marusik et al., Bull. Br. arachnol. Soc., 13 (8): 322 (examined).

Notioscopus jamalensis Grese, 1909 was originally described from the southern part of Yamal Peninsula (Russia, NW of West Siberia, Ob' River delta area) from a single female [Grese, 1909]. Until 1988, this species was only mentioned in catalogues and faunistic lists as referred to the original description. K. Eskov [1988], in his survey of the spiders of southern Siberia, published new records of *N. jamalensis* from the middle flow region of Yenisei River (Middle Siberia), as well as Magadan Area and Cisokhotia (East Siberia). Revision of the material which Eskov dealt with shows that he misidentified *N. jamalensis*, an error followed by all his successors (see above). So the name "*N. jamalensis*" (non sensu Grese [1909]) has hitherto been used for another species formally described here as new.

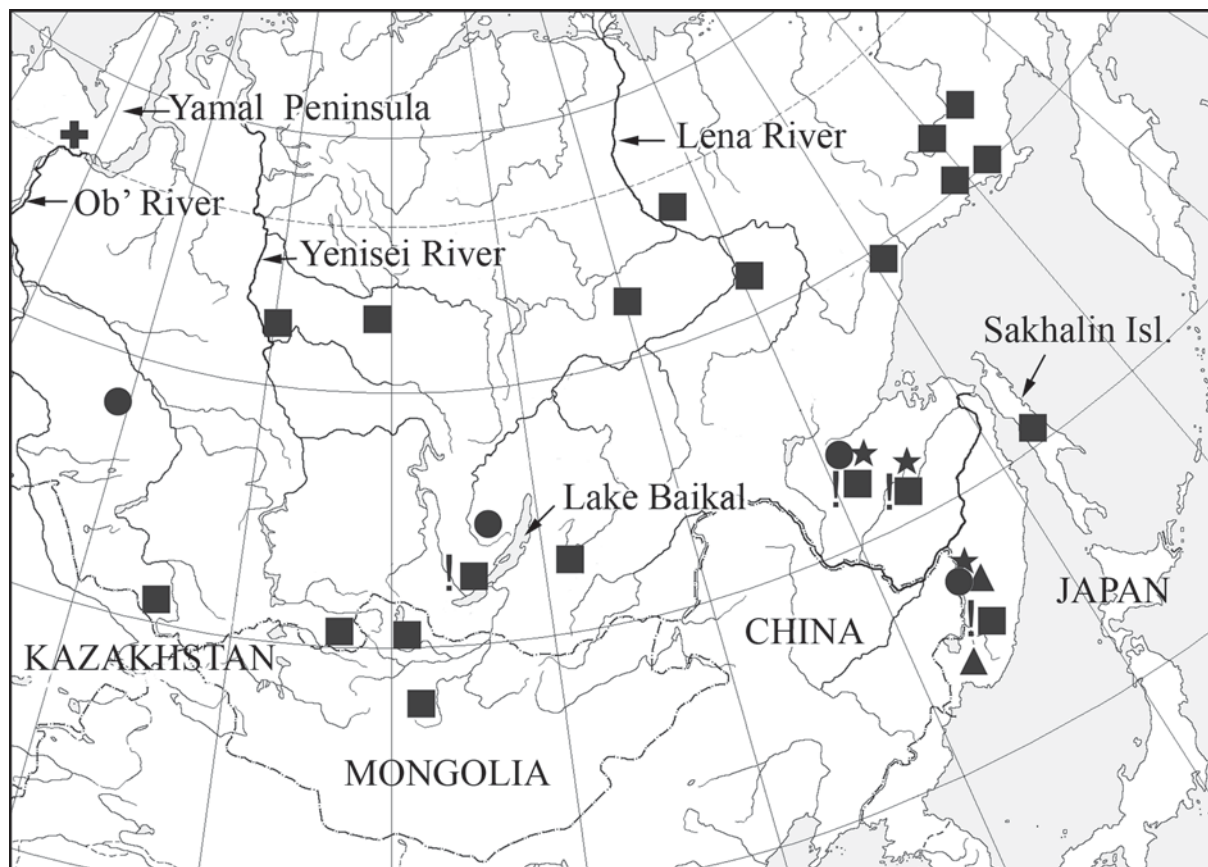
The genus *Notioscopus* has just been reviewed [Marusik et al., 2006]. Both sexes of *N. jamalensis* (not sensu Grese [1909]) have been described and illustrated, the male for the first time, but the drawings and SEM micrographs of the epigyne, as well as the description, do not correspond to the illustration of the epigyne as given by Grese [1909] for his *N. jamalensis*. It seems as though Marusik et al. [2006] failed to compare their material with the original description and sole drawing of the epigyne of *N. jamalensis*, having relied instead on the earlier misidentification. Otherwise they would have certainly noticed the obvious discrepancies.

This leaves the identity of *Notioscopus jamalensis* sensu Grese [1909] open to question. Unfortunately, the type of *N. jamalensis* is lost [K. Mikhailov, personal communication], the original description is too concise and incomplete, while the illustration of the epigyne is not quite clear for an unquestioned identification. However, the spider faunas of the southern part of Yamal Peninsula, and of the adjacent territories, are well-studied. So I have checked all linyphiid species known to occur in Yamal Peninsula, the northern Urals and West Siberia and found out the Grese's drawing of the epigyne more or less closely corresponds to several species, such as *Mecynargus sphagnicola* (Holm, 1939), *Hilaira gibbosa* Tanasevitch, 1982, *H. minuta* Eskov, 1979, *Notioscopus sarcinatus* (O. Pickard-Cambridge, 1872), *Semljicola simplex* (Kulczyński, 1908) and some others. Still none of these species can be accurately recognized based both on Grese's sketch and the original description of *N. jamalensis*, i.e., size, coloration, number of cheliceral teeth, etc. I have checked all the Siberian fauna, but with the same result. As it seems impossible to unequivocally apply the original concept to any known species, *N. jamalensis* is to be considered as a **nomen dubium**. The epigyne of *N. jamalensis* sensu Marusik et al. [2006] is the least of all above species that resembles Grese's illustration. Moreover, this species is distributed neither in the southern Yamal nor even in West Siberia, occurring only east of Yenisei River.

MATERIAL. HOLOTYPE ♂ (ZMMU), Russia, middle flow of Yenisei River (62°20'N, 89°01'E), Bolshaya Varlamovka River, swampy forest on riverside, in moss, 29.VIII.1979, leg. K. Eskov.

PARATYPES: 4 ♂♂, 5 ♀♀ (ZMMU), together with holotype, 29.VIII.1979, leg. K. Eskov; 7 ♂♂, 11 ♀♀ (ZMMU), Magadan Area, upper reaches of Kolyma River, Aborigen Field Station, Aug. 1985, leg. Yu. Marusik.

New records. PARATYPES: 2 ♂♂ (CAT), Irkutsk Area, Lake Baikal Region, Bolshiye Koty Field Station (51°54'N, 105°03'E), *Betula* forest with *Pinus sibirica*, in moss and litter, 18.VI.1988, leg. A. Tanasevitch; 1 ♂, 3 ♀♀ (ZMMU), Khabarovsk Province, Bureya River Valley, ca 210 km NE of



Map. Distribution of *Notioscopus jamalensis* Grese 1909 (cross), *N. sibiricus* sp.n. (square, after Marusik et al. [2006] with changes, "!" — new localities), *Notiogyne falcata* sp.n. (star), *Carorita sibirica* sp.n. (circle), and *Stemonyphantes parvipalpus* sp.n. (triangle).

Карта. Распространение *Notioscopus jamalensis* Grese 1909 (крест), *N. sibiricus* sp.n. (квадрат, по Marusik et al. [2006], с изменениями, "!" — новые находки), *Notiogyne falcata* sp.n. (звезда), *Carorita sibirica* sp.n. (круг), *Stemonyphantes parvipalpus* sp.n. (треугольник).

Chegdomyn, 3.5 km downstream of confluence of Pravaya & Levaya Bureya rivers, near Strelka Cordon 51°39'N, 134°15'E, *Larix* forest, in *Sphagnum*, 25.V.2003, leg. A. Tanasevitch; 1 ♀ (ZMMU), same, *Betula* forest, in litter, 31.V.2003, leg. A. Tanasevitch; 2 ♂♂, 3 ♀♀ (ZMMU), Amurskaya Area, Selezdzhinskiy District, near border of buffer zone of Norskiy Nature Reserve, 52°20'N, 129°56'E (centre of the reserve), Burunda River basin, 9 km SE of Burunda Cordon, mosses and leaf litter in sparse growth of burnt *Betula platyphylla* and *Larix gmelinii* with spots of *Ahnus* sp., dense growth of *Ledum palustre*, *Vaccinium uliginosum*, *V. vitis-idaea* on gentle slope, 20.IX.2004, leg. A. Ryvkin; 3 ♀♀ (ZMMU), Norskiy N.R. (buffer zone), Burunda River basin, 4 km NW of Burunda Cordon, mosses and leaf litter on very gentle slope with *Larix gmelinii*, *Ahnus* sp., *Ledum palustre*, undergrowth of *Betula platyphylla*, *Hylocomium splendens*, *Dicranum* sp., etc., 8.X.2004, leg. A. Ryvkin; 1 ♀ (ZMMU), Norskiy Reserve (buffer zone), Burunda River basin, 4.5 km NW of Burunda Cordon, mosses and leaf litter in forest on slope under *Betula platyphylla*, *Larix gmelinii* with *Ledum palustre*, *Rhododendron* sp., *Ahnus* sp., *Pleurozium schreberi*, *Hylocomium splendens*, etc., 14.IX.2004, leg. A. Ryvkin; 1 ♀ (CAT), Maritime Province, Chyuguevka Distr., near Bulyga-Fadeev, Verkhne-Ussuriyskiy Fields Station, *Pinus sibirica* forest, in moss, 14.VII.1991, leg. A. Tanasevitch.

For description, figures and taxonomic remarks, see Marusik et al. [2006] under *N. jamalensis*.

DISTRIBUTION. Siberia: from Yenisei River to Magadan Area and Cisokhotia in the East; through the mountains of South Siberia via the Lake Baikal region to Khabarovsk and Maritime provinces, and Sakhalin Island in the East. Known from Mongolia (see Map).

Notiogyne gen.n.

Type species: *Notiogyne falcata* sp.n.

DIAGNOSIS. Males are diagnosed by the highly modified carapace with a protruding and splay front, the presence of a large lobe behind the ocular area, the unique shape of the palpal tibia, the coiled embolus and the presence of an anterior radical process (sensu Hormiga [2000]) in the embolic division. Females are diagnosed by the rounded and slightly protruding median plate.

DESCRIPTION. Small-sized erigonines, total length 1.60–1.85. Chaetotaxy: 2.2.1.1 in both sexes. TmI 0.55–0.61. Metatarsi IV without trichobothrium.

Male. Carapace highly modified: front protruding and splay, followed by a large lobe separated from head by a deep slit. Palpal tibia with a wide lateral outgrowth terminating with a black, strong, stylet-shaped process. Paracymbium small, simple, hook-shaped. Suprategular apophysis long and narrow. Median membrane very long, covering the su-

pratergular apophysis. Radical part of embolic division relatively large with a slender, tail-shaped, anterior radical process at base of embolus. Latter coiled, with a membranous edge, distally broadened and turned ca 90° to the coil plane.

Female. Carapace unmodified. Median plate of epigyne rounded and slightly protruding.

TAXANOMIC REMARKS. The epigyne and vulva of the new species are similar to those of *Notioscopus sarcinatus* (O. Pickard-Cambridge, 1872), the type species of *Notioscopus* Simon, 1884, but still they differ in the more rounded median plate and the shape of the dorsal plate (cf. Figs 17–21 & 22–25). The male carapace also resembles that of *N. sarcinatus* and *N. sibiricus* sp.n., but can be recognised by the splay front and the larger postocular lobe. The shape of the male palpal tibia reminds of that of *N. sibiricus* sp.n., but in *Notiogyne falcata* sp.n. the retrolateral apophysis is thicker and terminating with a strong stylet-shaped process (Figs 1, 3, 9, 13).

Despite the obvious similarities in the shape of the epigyne, of the male carapace and in the structure of the palpal tibia, I am not inclined to bring *Notiogyne* gen.n. and *Notioscopus* together, because these genera show too different basic palp conformations. Thus, *Notiogyne* gen.n. has a long and coiled embolus, the well-developed supratregular apophysis and median membrane (Figs 4–6, 10–12), but in *Notioscopus* the embolus and supratregular apophysis are very short (Fig. 8), while the median membrane (embolic membrane in Marusik et al. [2006]) is poorly-expressed. The shape of the embolic division of *Notiogyne* gen.n. is similar to that in *Baryphyma* Simon, 1884, *Sisicottus* Bishop et Crosby, 1938, *Typhochrestus* Simon, 1884, *Typhochrestoides* Eskov, 1990 and some others. Species of these genera, in addition to the long and coiled embolus, also show a tail-shaped anterior radical process.

SPECIES INCLUDED. The type species only.

ETYMOLOGY. The generic name refers to *Notioscopus*, on the one hand, and “epigyne”, on the other hand, reflecting the similarity in epigynal structure of the new genus with the type species of *Notioscopus*. Gender feminine.

Notiogyne falcata sp.n.

Figs 1–7, 9–21.

MATERIAL. HOLOTYPE ♂ (ZMMU), Russia, Amurskaya Area, Selemdzhinskiy District, Norskiy Nature Reserve, 52°20'N, 129°56'E (centre of the reserve), Burunda River near Ozyorniy Rill mouth, plant debris and mosses among tussocks of *Carex from* spp. and Poaceae with *Spiraea* sp., *Vicia* sp., *Plagiomnium* sp., etc., in open flood-plain depression with tracks of *Capreolus capreolus*, 1.X.2004, leg. A. Ryvkin.

PARATYPES. 1 ♂, 4 ♀♀ (ZMMU), together with holotype, 1.X.2004, leg. A. Ryvkin; 1 ♀ (ZMMU), Selemdzhinskiy District, Selemdzha River basin, 2 km upstream of Norsk, mosses and plant debris among *Carex* spp., Poaceae, *Filipendula palmata*, *Spiraea* sp., *Salix* sp., *Padus* sp., etc. on swampy sides of small drainage lake (dammed rill), 06.IX.2004, leg. A. Ryvkin; 1 ♀ (ZMMU), Norskiy N.R. (buffer zone), Burunda River basin, 0.5–0.7 km NW of Burunda Cordon, sedge-gramineous swamp with *Sphagnum girgensohnii* and true mosses around lake, 10.IX.2004, leg. A. Ryvkin; 1 ♂, 4 ♀♀ (CAT), Norskiy N.R. (buffer zone), Burunda River basin near Burunda Cordon, plant debris and mosses on swampy sides of flood-plain lake: *Carex* spp., Poaceae, *Spiraea* sp., sparse *Climacium* sp., *Hypnum* sp., *Sphagnum* sp., *Polytrichum* sp., etc., 9.IX.2004, leg. A. Ryvkin; 2 ♀♀ (ZMMU), Norskiy N.R., lower reaches of Chervinka River, mosses, plant debris, leaf litter on wide swamp with tussocks of *Carex* spp. and Poaceae with *Salix* spp., *Alnus* sp., *Betula fruticosa*, *Ledum palustre*, *Chamaedaphne calyculata*,

Vaccinium uliginosum, undergrowth and young trees of *Betula platyphylla* and *Populus tremula*, individual trees of *Larix gmelinii*, *Sphagnum squarrosum*, *Sphagnum* spp., *Polytrichum* spp., etc., 2.VII.2005, leg. A. Ryvkin & E. Veselova; 1 ♀ (ZMMU), Nora River below Maltsevskiy Cordon, mosses and leaf litter among *Carex* spp. and Poaceae on narrow spit between river and lake, 10.VI.2005, leg. A. Ryvkin & E. Veselova; 6 ♀♀ (ZMMU), Nora River basin near Meunskiy Cordon, mouth of Opasnyi Rill, mosses and plant debris among tussocks of Poaceae, *Carex* spp., etc. on flood-plain, 15.VII.2005, leg. A. Ryvkin; 2 ♀♀ (ZMMU), Nora River basin near Meunskiy Cordon, mosses, leaf litter and plant debris on swampy flood-plain of intermittent rill with *Alnus* sp., *Padus* sp., *Salix* spp., *Betula platyphylla*, Poaceae, *Carex* spp., *Ledum palustre*, *Filipendula palmata*, *Vaccinium uliginosum*, *Convallaria keiskei*, *Trientalis europaea*, *Maianthemum bifolium*, *Sphagnum squarrosum*, *Sph. girgensohnii*, *Sph. centrale*, *Sph.* spp., *Hypnum* sp., etc., 10.VII.2005, leg. A. Ryvkin; 4 ♀♀ (CAT), Khabarovsk Province, Verkhnebureinskiy District, Bureinskiy Nature Reserve upstream of Strelka Cordon, near mouth of Pravaya Bureya River, 560 m, mosses and plant debris on swampy sides of lake and rill, with *Carex* spp., Poaceae gen. sp., *Sphagnum* spp., *Ledum palustre*, *Chamaedaphne calyculata*, *Polytrichum* spp., *Comarum palustre*, etc., 1.X.2006, leg. A. Ryvkin; 1 ♀ (CAT), Khabarovsk Province, Bolshekhkhtsyrskiy N.R., near Chirki Cordon (48°11'N, 134°41'E), bank of Ussuri River, hummocky herb-*Calamagrostis* swamp, 3.VI.2004, leg. A. Tanasevitch; 1 ♀ (CAT), same, near Odyr Cordon (48°11'N, 134°86'E), hummocky herb-*Calamagrostis* swamp on fire-site, 8.VI.2004, leg. A. Tanasevitch.

DIAGNOSIS. See above under the genus.

ETYMOLOGY. The specific name refers to the shape of the male palpal tibia.

DESCRIPTION. Male. Total length, 1.63. Carapace highly modified, as in Figs 14–16, 0.80 long, 0.58 wide, pale greyish brown. Chelicerae 0.25 long. Legs pale brown. Leg I, 1.84 long (0.50 + 0.18 + 0.43 + 0.40 + 0.33), IV, 2.04 long (0.63 + 0.18 + 0.50 + 0.43 + 0.30). Chaetotaxy: 2.2.1.1, spines very short, weakly visible, especially on tibia I–II. TmI, 0.56. Metatarsi IV without trichobothrium. Palp (Figs 1–7, 9–13): see above under the genus. Abdomen 0.90 long, 0.68 wide, grey.

Female. Total length, 1.80. Carapace unmodified, 0.83 long, 0.60 wide, pale greyish brown. Chelicerae 0.33 long. Leg I, 2.26 long (0.63 + 0.25 + 0.55 + 0.45 + 0.38), IV, 2.52 long (0.73 + 0.23 + 0.65 + 0.53 + 0.38). Chaetotaxy 2.2.1.1, length of spine on tibia I almost equal to diameter of segment, on tibia IV about two diameters. TmI, 0.60. Metatarsi IV without trichobothrium. Abdomen 1.08 long, 0.73 wide, grey. Epigyne (Figs 17–21): see above under the genus.

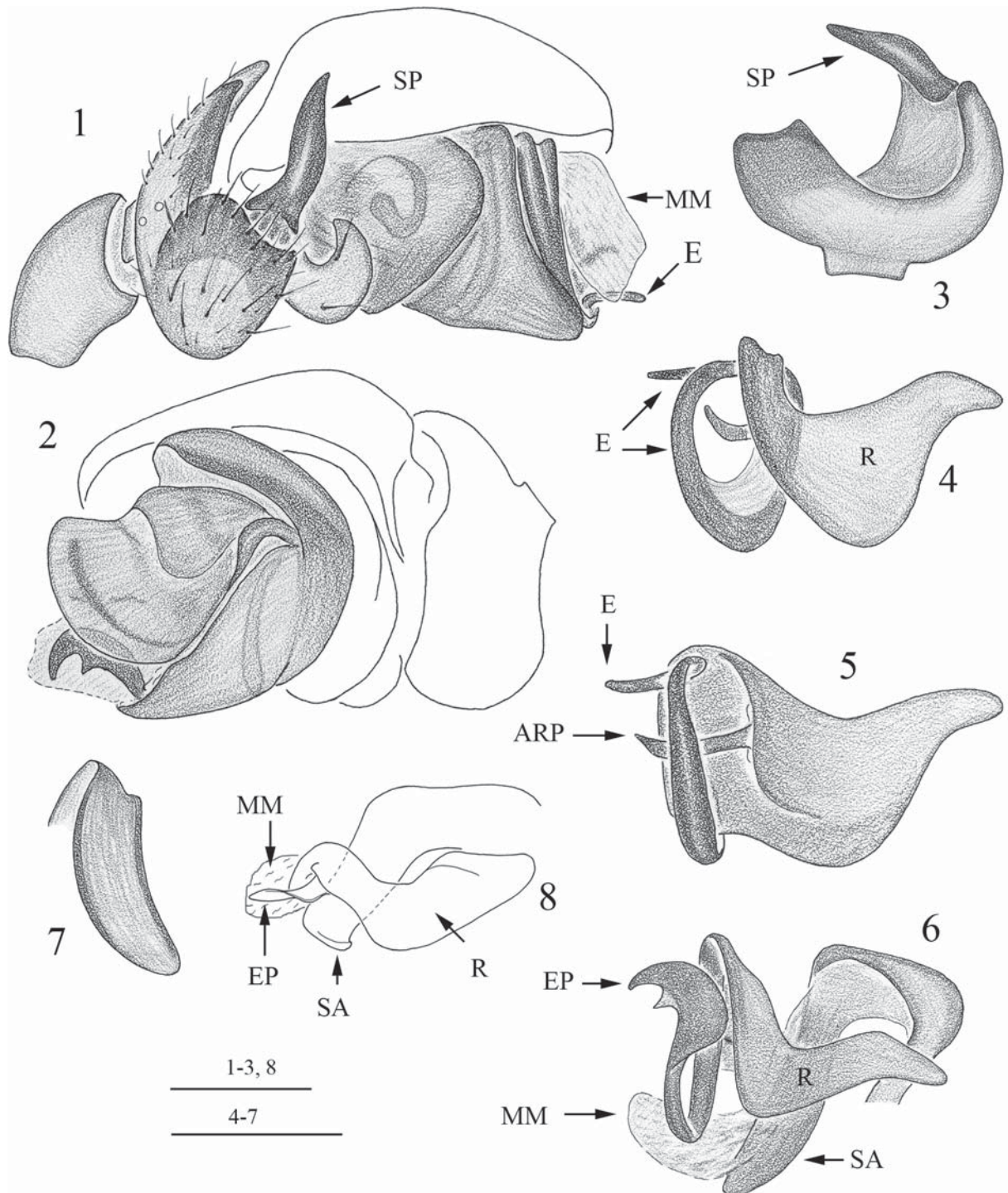
TAXONOMIC REMARKS. See above under the genus.

DISTRIBUTION. Russian Far East: Amurskaya and Khabarovsk provinces (see Map).

Carorita Duffey et Merrett, 1963

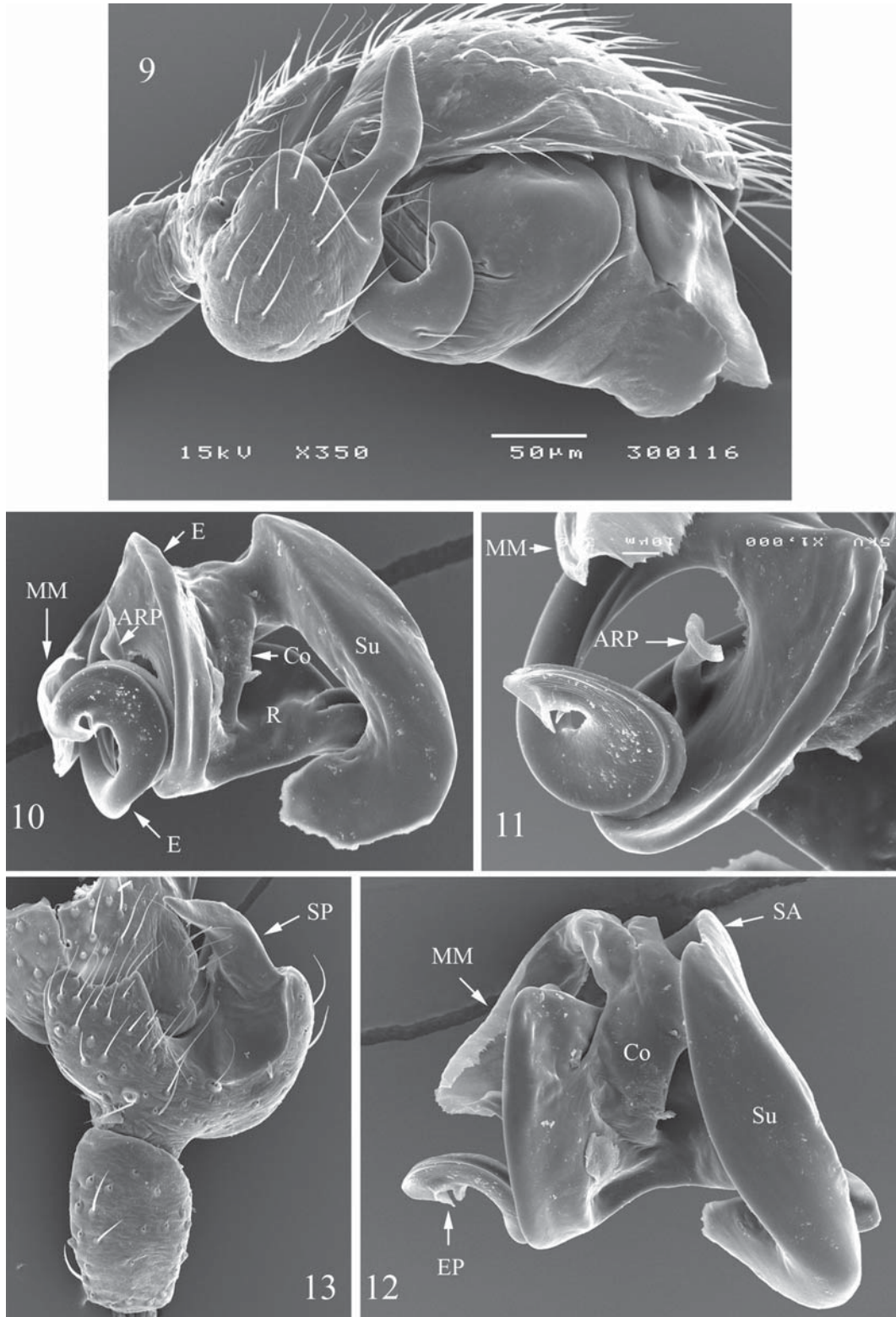
Type species: *Oedothorax limnaeus* Crosby et Bishop, 1927

At present the genus *Carorita* Duffey et Merrett, 1963 comprises tree species: *C. limnaea* (Crosby et Bishop, 1927) (type species), *C. paludosa* Duffey, 1971 and *C. hiberna* (Barrows, 1945). Duffey [1971], when describing *C. paludosa*, noted some similarities in somatic characters with *C. limnaea*, e.g. chaetotaxy (2.2.1.1, with an additional proteral spine on TiI), position of TmI, arrangement and relative sizes of eyes, etc.), but mentioned some differences in the shape of the embolic division. Still he did not detail them, as “dissection has not been possible because only one male has so far been taken” [op. cit]. This must have been the main



Figs 1–8. *Notiogyne falcata* sp.n. (1–7), paratype, Norskiy N.R. & *Notioscopus sarcinatus* (O. P.-Cambr., 1872) (8), Yuganskiy N.R., West Siberia: 1, 2 — right palp (retrolateral & prolateral views, respectively), 3 — palpal tibia (dorsal view), 4, 5 — embolic division (different views), 6, 8 — suprategular apophysis & embolic division, 7 — suprategular apophysis. Abbreviations used: ARP — anterior radical process, E — embolus, EP — embolus proper, MM — median membrane, R — radix, SA — suprategular apophysis, SP — stylet-shaped process.

Рис. 1–8. *Notiogyne falcata* sp.n. (1–7), паратип, Норский заповедник и *Notioscopus sarcinatus* (O. P.-Cambr., 1872), Юганский заповедник, Западная Сибирь (8): 1, 2 — правая пальпа (вид сбоку), 3 — голень пальпы (вид сверху), 4–5 — эмболюсный отдел, 6, 8 — супратегулярная апофиза и эмболюсный отдел, 7 — супратегулярная апофиза.



Figs 9–13. *Notiogyne falcata* sp.n., paratype, Norskiy N.R.: 9 — right palp (retrolateral view), 10, 12 — embolic division & suprategulum, 11 — distal part of embolic division, 13 — palpal tibia (dorsal view). Abbreviations used: ARP — anterior radical process, Co — column, E — embolus, EP — embolus proper, MM — median membrane, R — radix, SA — suprategular apophysis, SP — stylet-shaped process, Su — suprategulum.

Рис. 9–13. *Notiogyne falcata* sp.n., паратип, Норский заповедник: 9 — правая пальпа (вид сбоку), 10, 12 — супратегулярная апофиза и эмболюсный отдел, 11 — дистальная часть эмболюсного отдела, 13 — голень пальпы (вид сверху).

reason why he concluded that these differences “are not great enough to create a new genus”. So he assigned his new species to *Carorita*.

A detailed study of the structure of the embolic division and the epigyne shows, however, that the differences in palp and epigyne conformation are strong enough to consider *C. paludosa* as not being congeneric with *C. limnaea* in spite of the same unique chaetotaxy and other similarities. This is especially clear now when a new *Carorita* has been found in Siberia (see below). The new species is closely related to *C. limnaea*, thus making *C. limnaea* even more distant from *C. paludosa* than before. The main differences between these species lie in the basic structure of the embolic division (cf. Figs 32, 37 & 40). Thus, *C. limnaea* shows a long and introduced-type embolus (see Wiehle [1956]), as clearly shown in Holm's [1968] drawing (Fig. 46). In contrast, *C. paludosa* has a short and joint-type embolus with a corresponding epigynal structure, i.e. short seminal ducts. The shape of the paracymbium is also different in *C. limnaea* and *C. paludosa* (cf. Figs 28, 34 & 38); moreover, the latter shows no median membrane which well-developed in *C. limnaea* and in the new *Carorita* species (cf. Figs 31, 36 & 39).

Based on these differences, I consider *C. paludosa* as being not congeneric with the type species of *Carorita*. Therefore, it must be removed from this genus. Since *C. paludosa* cannot be accommodated in any other known genus, it appears necessary to create a new genus (see below).

Zujko-Miller [1999] transferred *Sisicottus hibernus* Barrows, 1945 to the genus *Carorita* as a species lacking any synapomorphies shared with the other members of *Sisicottus* Bishop et Crosby, 1938. This decision was based on a cladistic analysis of erigonine relationships which incorporated 46 taxa scored for 74 characters. The resulting cladogram placed *S. hibernus* sister to *C. limnaea*. So it was concluded that *S. hibernus* be better transferred to *Carorita* than in a new monotypic genus or left in *Sisicottus*. In my opinion, however, this decision was incorrect. The palp of *C. hiberna* shares the same basic conformation with *Diplocentria* Hull, 1911 (see Millidge [1984]), e.g., similar shape of palpal tibia, long curved embolus, relatively large radix, long median membrane (embolic membrane in Zujko-Miller [1999]). The chaeto- and trichobothriotaxy are also the same as in *Diplocentria*: TmI, 0.34, tibial spines 2.2.2.1 compared to 2.2.1.1, and an additional prolateral spine on tibia I in *Carorita*. So *S. hibernus* is better to be placed in *Diplocentria* than in *Carorita*. So I formalize this and transfer it here: *Diplocentria hiberna* (Barrows, 1945), **comb.n.** The embolic division of *D. hiberna* shows a radical outgrowth unique in *Diplocentria* (radical tailpiece in Zujko-Miller [1999]). This, together with a possibly peculiar epigynal conformation (the female is still unknown), might warrant in the future the creation of a new genus to incorporate *Diplocentria hiberna* alone.

Carorita sibirica sp.n.

Figs 26–32, 41–43.

MATERIAL. HOLOTYPE ♂ (ZMMU), Russia, Tyumen Area, Khanty-Mansi Autonomous Region, Surgutskiy District, Yuganskiy Nature Reserve, 59°45'N, 74°39'E (centre of the reserve), Nyogus'yakh River basin near Petchpan'yakh River mouth. Mosses and litter on large swamp: *Carex* spp., *Comarum palustre*, *Equisetum* sp., *Eriophorum* sp., Gramineae, *Rumex* sp., *Aulacomnium* sp., *Plagiomnium* sp., *Ptilium crista-castrensis*, *Sphagnum* sp., *Chamaenerium angustifolium*, *Betula* and *Salix* sp., etc., 13.IX.2000, leg. A. Ryvkin.

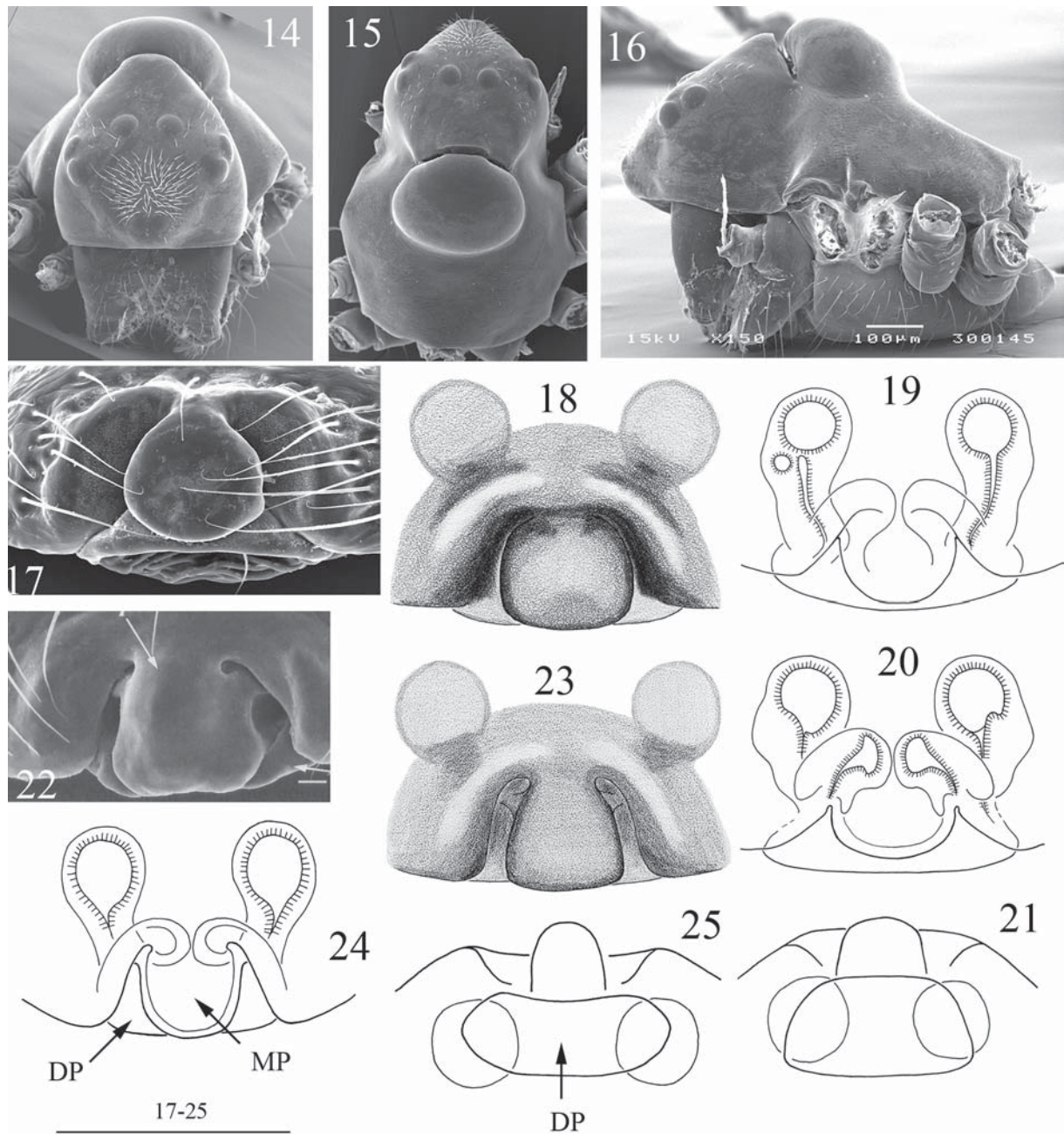
PARATYPES. 1 ♂, 10 ♀♀ (ZMMU), together with holotype, 13.IX.2000, leg. A. Ryvkin; 1 ♂, 1 ♀ (CAT), same, Nyogus'yakh River basin near Petchpan'yakh River mouth. Mosses and litter on large swamp: *Carex* spp., *Comarum palustre*, *Equisetum* sp., *Eriophorum* sp., Gramineae, *Rumex* sp., *Aulacomnium* sp., *Plagiomnium* sp., *Ptilium crista-castrensis*, *Sphagnum* sp., *Chamaenerium angustifolium*, sparse *Betula*, *Salix* sp., spots of dwarf birch on hummocks etc., 11.IX.2000, leg. A. Ryvkin; 1 ♂ (ZMMU), Amurskaya Area, Selezdzhinskiy District, Norskiy N.R., 52°20'N, 129°51'E, Nora River basin near Maltsevskiy Cordon, mosses and plant debris on swamp near southern side of flood-plain lake: *Carex* spp., Poaceae, *Salix* sp., *Filipendula palmata*, *Comarum palustre*, *Sphagnum squarrosum*, *Sph.* spp., *Polytrichum* sp., *Climacium* sp., etc., 30.VIII.2004, leg. A. Ryvkin; 1 ♀ (ZMMU), same, Maltsevskoye Lake, mosses and leaf litter on swampy lakeside with tussocks of Poaceae, *Carex* spp., *Spiraea* spp., etc., 11.VI.2005, leg. A. Ryvkin & E. Veselova; 1 ♂ (ZMMU), Norskiy N.R. (buffer zone), Burunda River basin, 0.5 km NW of Burunda Cordon, sedge-gramineous mesotrophic swamp with *Sphagnum girgensohnii* and true mosses around lake, 10.IX.2004, leg. A. Ryvkin; 1 ♀ (ZMMU), same, 1.5 km NW of Burunda Cordon, plant debris among tussocks of *Carex* spp. under sparse *Alnus* sp. with young growth of *Larix gmelinii* along rill bank near road, 17.IX.2004, leg. A. Ryvkin; 1 ♂, 2 ♀♀ (CAT), Irkutsk Area, Zhigalovo District, ca 54°48'N, 105°08'E (ca 60 km N of Lake Baikal), swampy *Larix* forest, in moss, 13.VIII.2006, leg. L. Rybalov; 1 ♀ (CAT), Khabarovsk Province, Bolshekhkhtyrskiy N.R., near Chirki Cordon (48°11'N, 134°41'E), bank of Ussuri River, hummocky herb-*Calamagrostis* swamp, 3.VI.2004, leg. A. Tanasevitch.

COMPARATIVE MATERIAL. *Carorita limnaea* (Crosby et Bishop, 1927): 1 ♂ (ZMMU), Tumen Area, Yamalo-Nenets Autonomous Region, south of Yamal Peninsula, Shchuchia River flow, mouth of Tanlova-Akha River, VII.1979, leg. T. Andreeva; 1 ♂, 1 ♀ (CAT), Tomsk Area, Luginetskiy Vil. (ca. 78°52'E, 58°10'N), 8.IX.1998, leg. A. Tanasevitch; 2 ♂♂, 6 ♀♀ (ZMMU), Krasnoyarsk Province, Plateau Putorana, Lake Ayan, mouth of Annundakta River, swampy *Larix* forest, in moss, leg. K. Eskov; 30 ♂♂ & ♀♀ (ZMMU), Krasnoyarsk Province, Yenisei River middle flow, Mirnoye Field Station (62°17'N, 89°E), Varlamovka River, 21.VIII.–2.IX.1979, leg. K. Eskov; 1 ♂, 3 ♀♀ (ZMMU), Khabarovsk Province, Bureinskiy Nature Reserve, Strelka Cordon, *Sphagnum* swamp with *Larix* sparse, 25.VII.2004, leg. D. Logunov; 1 ♂, Norskiy N.R. (buffer zone), Burunda River basin, 0.5–0.7 km NW of Burunda cordon, sedge-gramineous swamp with *Sphagnum* sp and true mosses around lake, 10.IX.2004, leg. A. Ryvkin.

DIAGNOSIS. The male is diagnosed by the shape of the palpal tibia and paracymbium, the female by the vulval structure.

DESCRIPTION. Male. Total length, 1.95. Carapace unmodified, 0.83 long, 0.60 wide, pale brown to brown. Chelicerae 0.38 long, anterior margin with four teeth, stridulatory ridges well-developed. Legs pale brown. Leg I, 2.26 long (0.63 + 0.20 + 0.53 + 0.50 + 0.40), IV, 2.11 long (0.60 + 0.20 + 0.50 + 0.48 + 0.33). Chaetotaxy: 2.2.1.1, tibia I bearing an additional prolateral spine. TmI, 0.30. Metatarsi IV without trichobothrium. Palp (Figs 26–32): Tibia with a small, black, pointed tooth. Paracymbium large, bearing several spines. Suprategular apophysis short, rounded distally. Median membrane well-visible as a protruding process. Embolus relatively long, basally with a wide membranous edge. Abdomen 0.88 long, 0.63 wide, grey.

Female. Total length, 2.03. Carapace unmodified, 0.90 long, 0.63 wide. Chelicerae 0.43 long. Leg I, 2.48 long (0.70 + 0.25 + 0.60 + 0.53 + 0.40), IV, 2.23 long (0.65 + 0.23 + 0.50 + 0.50 + 0.35). TmI, 0.30. Metatarsi IV without trichobothrium. Abdomen 1.13 long, 0.88 wide. Epigyne (Figs 41–43) without median plate: ventral surface (ventral plate) of the epigyne is a slightly chitinised integument with a thickened



Figs 14–25. *Notiogyme falcata* sp.n. (14–21), paratypes, Norskiy N.R. & *Notioscopus sarcinatus* (O. P.-Cambr., 1872), Yuganskiy N.R., West Siberia (22–25): 14–16 — male carapace (frontal, dorsal & lateral views, relatively), 17, 18, 21–23, 25 — epigyne, 19, 20, 24 — vulva (17–20, 22–24 — ventral view, 21, 25 — dorsal view). 22 — after Marusik et al. [2006]. Abbreviations used: DP — dorsal plate, MP — median plate.

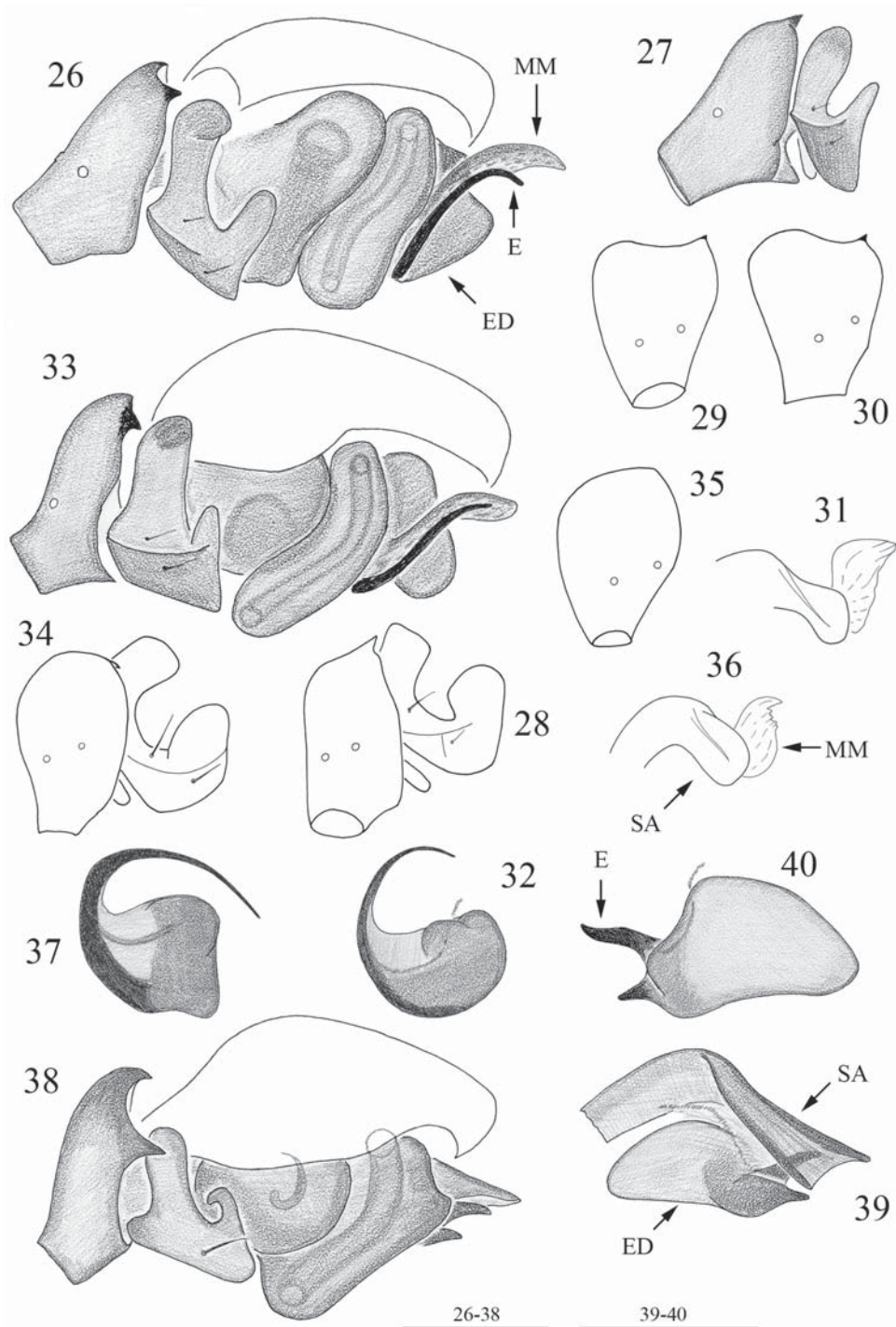
Рис. 14–25. *Notiogyme falcata* sp.n. (14–21), паратипы, Норский заповедник & *Notioscopus sarcinatus* (O. P.-Cambr., 1872), Юганский заповедник, Западная Сибирь (22–25): 14–16 — головогрудь самца (вид спереди, вид сверху & вид сбоку, соответственно), 17, 18, 21–23, 25 — эпигина, 19, 20, 24 — вульва (17–20, 22–24 — вид снизу, 21, 25 — вид сверху). 22 — по Marusik et al. [2006].

edge. Aperture large, rounded, dorsal plate quadrangular in shape. Sperm ducts long and wide, highly sclerotized, receptacles two-compartmented. Coloration, chaetotaxy, cheliceral teeth and stridulatory ridges as in male.

TAXONOMIC REMARKS. The species is very close to *C. limnaea* (Crosby et Bishop, 1927) and both can easily be confused with one another. The main differences lie in the

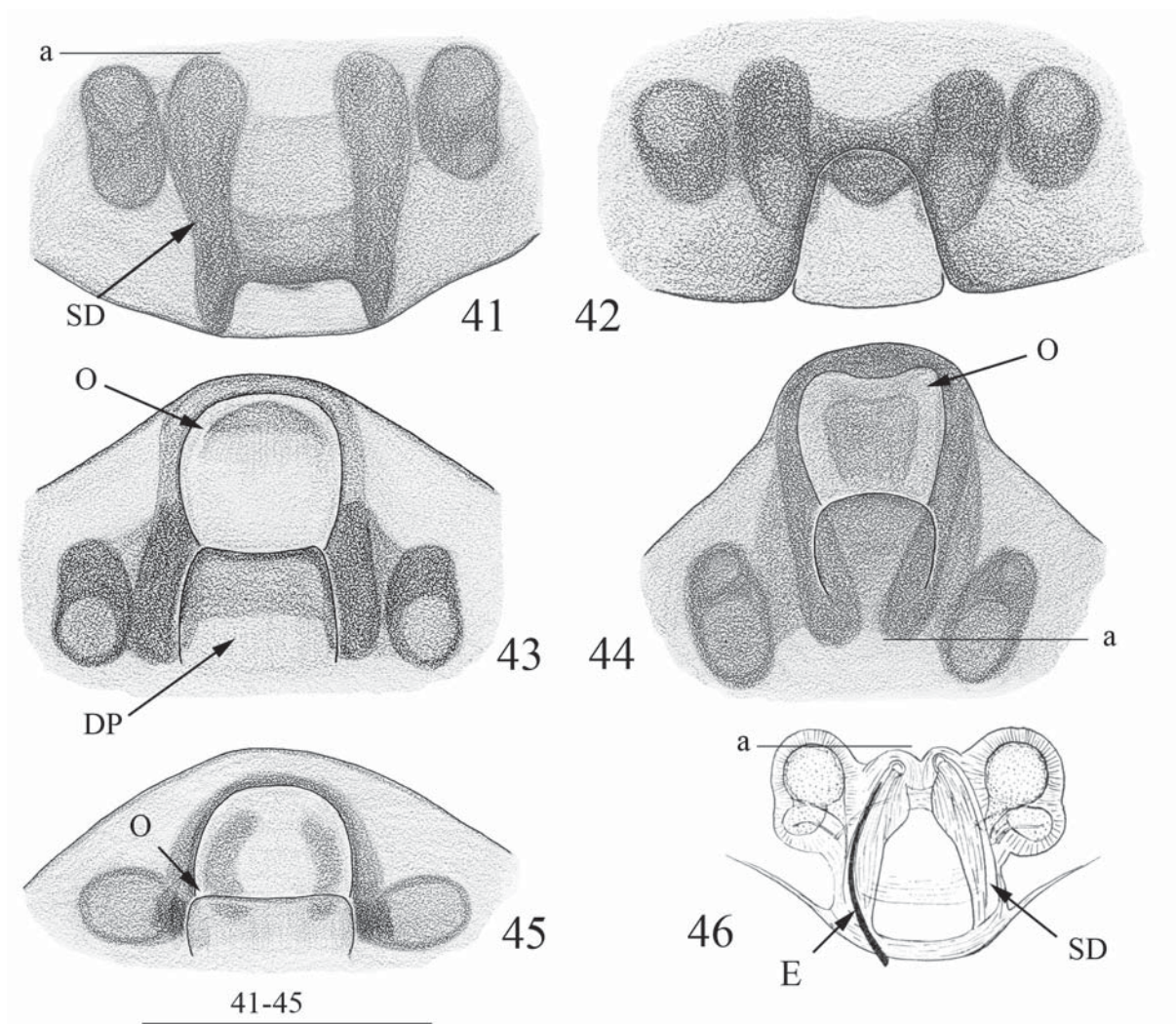
shape of the palpal tibia (cf. Figs 26–30 & 33–35) and in some details of epigynal structure (cf. Figs 43 & 44); thus, *C. limnaea* shows more protruded and rounded posterior edge of the epigyne, smaller dorsal plate, as well as the sperm ducts lower than receptacles: (cf. line “a” in Figs 41 & 44, 46).

ETYMOLOGY. The species name refers to the Siberian distribution of this species.



Figs 26–40. *Carorita sibirica* sp.n. (26–32), paratype, Yuganskiy N.R., West Siberia, *C. limnaea* (Crosby et Bishop, 1927) (33–37), Luginetskiy, West Siberia & *C. paludosa* Duffey, 1971 (38–40), Yuganskiy N.R.: 26, 33, 38 — right palp (retrolateral view), 27, 28, 34 — palpal tibia & paracymbium (27 — lateral view, 28, 34 — posterolateral view), 29, 30, 35 — palpal tibia (dorsal view, 29 & 30 — same specimen, different angles), 31, 36 — supralegular apophysis & median membrane, 39 — supralegular apophysis & embolic division, 32, 37, 40 — embolic division. Abbreviations used: E — embolus, EP — embolus proper, MM — median membrane, R — radix, SA — supralegular apophysis.

Рис. 26–40. *Carorita sibirica* sp.n. (26–32), паратип, Юганский заповедник, Западная Сибирь, *C. limnaea* (Crosby et Bishop, 1927) (33–37), Лугинецкий, Западная Сибирь & *C. paludosa* Duffey, 1971 (38–40), Юганский заповедник: 26, 33, 38 — правая пальпа (вид сбоку), 27, 28, 34 — голень пальпы и парацимбиум (27 — вид сбоку, 28, 34 — вид сбоку и сзади), 29, 30, 35 — голень пальпы (вид сверху, 29 & 30 — один экземпляр, под разными углами), 31, 36 — супратегулярная апофиза и медиальная мембрана, 39 — супратегулярная апофиза и эмболюсный отдел, 32, 37, 40 — эмболюсный отдел.



Figs 41–46. Epigyne of *Carorita sibirica* sp.n. (41–43), paratype, Yuganskiy N.R., West Siberia, *C. limnaea* (Crosby et Bishop, 1927) (44 — Luginetskiy, West Siberia, 46 — after Holm [1968]) & *C. paludosa* Duffey, 1971 (45), Yuganskiy N.R.: 41, 46 — ventral view, 42 — posteroventral view, 43–45 — dorsal view. Abbreviations used: DP — dorsal plate, E — embolus, stuck in sperm duct, O — opening, SD — sperm ducts; a — level of sperm ducts.

Рис. 41–46. Эпигина *Carorita sibirica* sp.n. (41–43), паратип, Юганский заповедник, Западная Сибирь, *C. limnaea* (Crosby et Bishop, 1927) (44 — Лугинетский, Западная Сибирь, 46 — по Holm [1968]) & *C. paludosa* Duffey, 1971 (45), Юганский заповедник: 41, 46 — вид снизу, 42 — вид снизу и сзади, 43–45 — вид сверху.

DISTRIBUTION. West & South Siberia, the Russian Far East: Amurskaya Area and southern part of the Khabarovsk Province (see Map).

Karita gen.n.

Type species: *Carorita paludosa* Duffey, 1971.

DIAGNOSIS. Males are diagnosed by the peculiar shape of the male palpal tibia, the large paracymbium, the relatively large embolic division with a short claw-shaped embolus and a pointed outgrowth at its base. Females are diagnosed by a missing median plate, the large rounded aperture opening dorsally, as well as by the long question mark-shaped fertilisation ducts.

SPECIES INCLUDED. Only the type species — *Karita paludosa* (Duffey, 1971) **comb.n.**, originally rather well described and depicted [Duffey, 1971]. So below only a short description of this monotypic genus is given.

SHORT DESCRIPTION. Small-sized erigonine, total length 1.35–1.70 mm. Male carapace unmodified, cephalic pits absent. Cheliceral stridulatory ridges well-defined in both sexes. Chaetotaxy 2.2.1.1, tibia I with an additional prolateral spine. Metatarsi IV without trichobothrium. Tml ca. 0.30. Male palp (Figs 38–40): Tibia with an apical and a retrolateral tooth, both dark and sharp. Paracymbium large, distal part bearing a spine (spines?). Suprategular apophysis short and wide; median membrane absent or very short. Embolus short with a small sharp outgrowth at base, radix relatively large and wide. Epigyne (Fig. 45) without median plate: ventral surface (ventral plate) a slightly chitinised integument with a thickened edge. Aperture large, rounded, dorsal plate long and narrow. Sperm ducts very short, fertilisation ducts very long, question mark-shaped. Receptacles uni-compartmented, oval.

TAXONOMIC REMARKS. The taxonomic position of *Karita* gen.n. is difficult to assess. The genus shows a unique but simple basic palpal conformation, as well as the unusual chaetotaxy, perhaps being isolated from the other known genera. The epigyne/vulva resembles that of *Carorita*, *Wabasso* Millidge, 1984 and *Diplocentria* Hull, 1911, but the fertilisation ducts are peculiar in shape.

ETYMOLOGY. The generic name is just a meaningless combination of letters. Gender feminine.

DISTRIBUTION. *Karita paludosa* (Duffey, 1971), **comb.n.** is widespread in extra-Mediterranean Europe, recently found also in West Siberia [Tanasevitch, 2005].

Stemonyphantes parvipalpus sp.n.

Figs 47–51.

MATERIAL. HOLOTYPE ♂ (ZMMU), Russia, Maritime Province, N of Vladivostok, Uglovoye (43°16rN, 132°05rE), 4.X.1997, leg. Yu. Marusik.

PARATYPE. 1 ♀ (ZMMU), Khabarovsk Province, Bolshekhokhtsirskiy Nature Reserve, Chirki Cordon (48°11rN, 134°31rE), bank of Ussuri River, hummocky *Calamagrostis* swamp, 4.VI.2004, leg. A. Tanasevitch.

DIAGNOSIS. The male is characterised by the small-sized palp, the absence of a proximal outgrowth on the cymbium, and by the shape of the distal tegular apophyses. The female is characterised by the presence of a pair of small triangular projections hanging out over a prominent middle part of the “dorsal plate”.

DESCRIPTION. Male. Total length 3.50. Carapace 1.75 long, 1.40 wide, brown with a black narrow margin and an indistinct, grey, median, elongated spot. Chelicerae 0.55 long. Legs brown with dark bands. Leg I, 6.45 long (1.75 + 0.55 + 1.50 + 1.55 + 1.10), IV, 6.70 long (1.80 + 0.50 + 1.60 + 1.75 + 1.05). Chaetotaxy. Fe I: 1-1-0-0, II–IV: 1-0-0-0; Ti I: 2-1-1-4; II: 2-1-1-4(5), III: 2-1-1-1, IV: 2-1-1-2; Mt I–II: 0-0-0-2, III: 0-1-1-1(0), IV: 0-1-1-2. TmI 0.31. Palp (Figs. 47–49): Tibia slightly elongated with a small ventral hook-shaped apophysis distally. Cymbium without proximal outgrowth. Paracymbium relatively small, distal lobe hooked. Tegulum with strongly sclerotized, pointed, distal apophyses. Radical part of embolic division flattened, in distal part with a claw-shaped apophysis covering the end of embolus. Embolus with a wide base, relatively long, slightly curved. Abdomen 2.00 long, 1.25 wide, dorsally pale, with a dark median stripe crossed and flanked by dark spots.

Female. Total length 4.95. Carapace 1.80 long, 1.35 wide, with a dark margin and median elongated spot. Chelicerae 0.75 long. Leg I, 6.20 long (1.75 + 0.55 + 1.45 + 1.45 + 1.00), IV, 6.30 long (1.75 + 0.55 + 1.50 + 1.60 + 0.90). Chaetotaxy. Fe I: 1-1-0-0, II–IV: 1-0-0-0; Ti I: 2-1-1-6; II: 2-1-1-5, III: 2-1-1-3, IV: 2-1-1-2; Mt I–II: 0-0-0-2, III: 0-1-1-2, IV: 0-1(2)-1-3(4). TmI, 0.35. Abdomen 3.40 long, 2.00 wide, abdomen and leg coloration as in male. Epigyne (Figs 50–51) with a pair of small triangular projections hanging out over a prominent middle part of “dorsal plate”.

TAXONOMIC REMARKS. The shape of the cymbium (absence of a proximal outgrowth) resembles that of *S. solitudus* Tanasevitch, 1994, known from Middle Asia; the presence of a pair of small triangular projections hanging out over the median plate of the epigyne reminds of that of *S. taiganus* (Ermolajev, 1930), known from the southern part of West Siberia. From the two above and the other congeners, *S. parvipalpus* sp.n. differs by the small size of the male palp, the peculiar shape of the radical part of the

embolus, as well as by the prominent middle part of the “dorsal plate” of the epigyne.

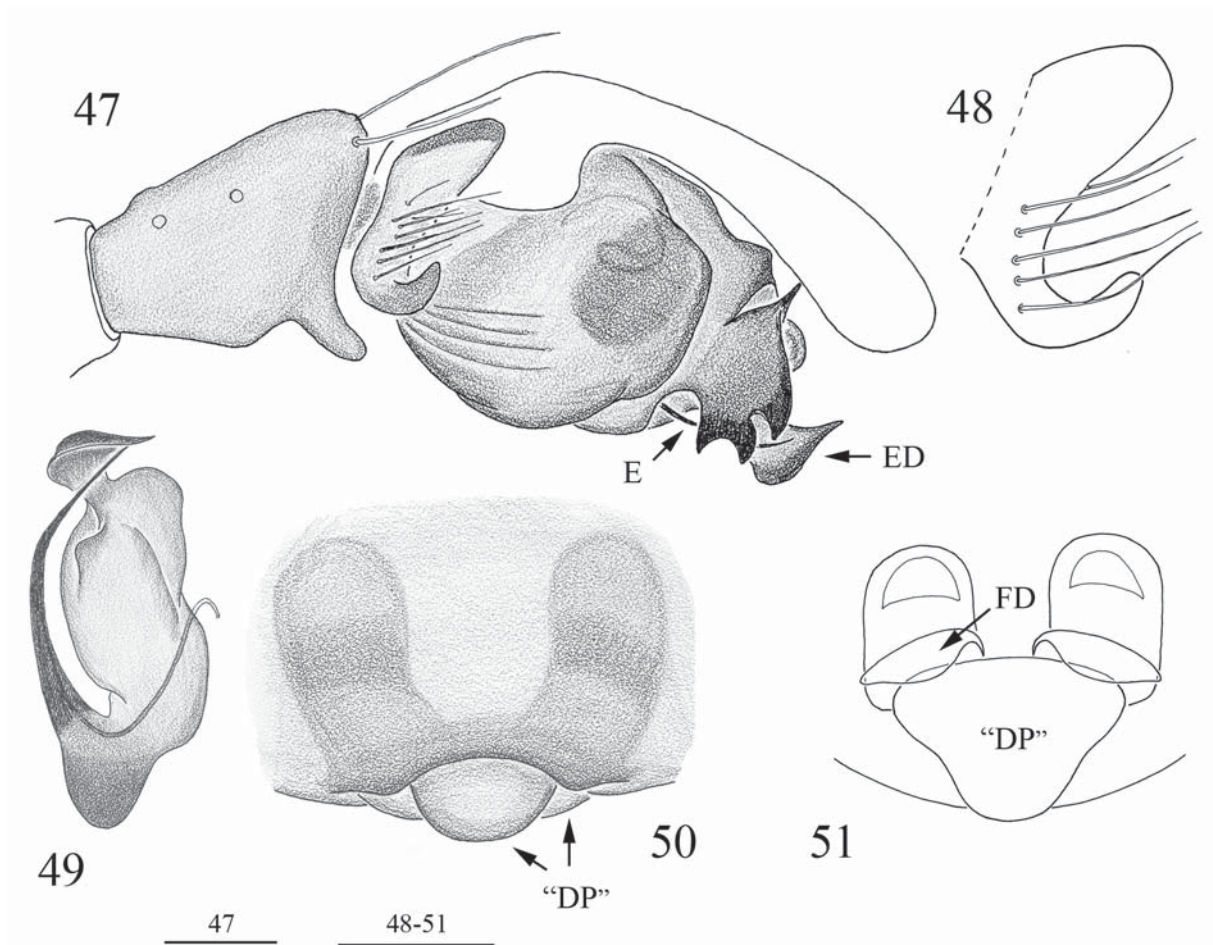
ETYMOLOGY. The specific name is a combination of two words: “parvus”, small, and “palpus”, palp, referring to the small size of the male palp.

DISTRIBUTION. The Russian Far East: southern part of the Khabarovsk and Maritime provinces (see Map).

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Figs 47–51. *Stemonyphantes parvipalpus* sp.n., ♂ holotype, ♀ paratype: 47 — right palp (retrolateral view), 48 — paracymbium (lateral view), 49 — embolic division, 50, 51 — epigyne (ventral & dorsal views, respectively). Abbreviations used: “DP” — “dorsal plate”, E — embolus, ED — embolic division, FD — fertilisation ducts.

Рис. 47–51. *Stemonyphantes parvipalpus* sp.n., ♂ голотип, ♀ паратип: 47 — правая пальпа (вид сбоку), 48 — парацимбиум (вид сбоку), 49 — эмболюсный отдел, 50, 51 — эпигина (вид снизу и вид сверху, соответственно).

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